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ABSTRACT

This study tested the effect of college student employment on students' levels of social and academic integration, professional and institutional commitment, and academic achievement and persistence. The survey model developed for the study included both the interactions between the student and the institution, the "fit," and the continuing influence of non-college forces such as employers and employment, as well as the effect of financial aid. The survey was administered to all the first year pharmacy students (N=408) at three selected colleges of pharmacy, both public and private. Follow-up data on academic achievement and persistence were obtained from the institutions the following semester. Usable complete sets of data were eventually available for 199 students. Analysis found that working students performed as well academically as nonworking students. Working students were also just as persistent as nonworking students. Employment also did not affect students' professional commitment. In fact, for students employed as "Pharmacy Technicians," the in-college socializing forces of faculty interaction were important influences on levels of professional commitment. Contains one figure and seven tables. (JB)

College Student Employment: Opportunity or Deterrent?

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Introduction

"Moonlighting latest major for collegians" was the headline of a page one article in a recent issue of USA Today (November 18, 1993). College students, now more so than ever, are employed. Over the past three decades the percentage of students employed while in college has increased from 45 to 56 percent (Stern and Nakata, 1991). The working student is now the majority on college campuses rather than the minority. How college student employment affect students' outcomes is becoming a more important question for policy makers in higher education.

There are several possible causes or explanations for the increase in the number of working college students. The first is the obvious change in student demographics. Students are older, and with that maturity comes family and career responsibilities. Secondly, the cost of a college degree has increased dramatically in recent years. Students may simply have to work to cover tuition and living expenses. Changing attitudes may be a third cause for the increase in employed students. Students are increasingly viewing college as a place to obtain employment skills, if not actual on-the-job experience. Students' personal value showing the greatest decline over the past fifteen years is "developing a meaningful philosophy of life" while the value showing the strongest upward trend is that of "being well off financially" (Astin, Green, & Korn, 1987). Students, now more so than ever, link college to gainful employment and successful careers. McKenzie (1981) argues that employment may offer the student an opportunity for learning outside the classroom. Employment may offer students "real life" experience, valuable career contacts, and opportunities to become familiar with career options. Actual skills and behaviors may be developed that are not learned in the typical college curriculum. Employment that is relevant or related to students' majors may further increase their commitment to and interest in the discipline or profession. This change in students' attitudes is also reflected in the increase in enrollment in professional academic programs such as business, architecture, and the health sciences. For example, pharmacy has seen a steady increase in enrollment over the last decade (Meyer, 1992). Many professional academic programs have long histories of required student apprenticeship or internship work experience, reflecting a belief in the learning benefits of real-world experience. Several states require students to obtain apprentice work hours for eligibility for the state pharmacy license exam. The underlying assumption is work experience reinforces classroom learning, and provides a laboratory for application of theory.

In spite of the trend toward employment and its possible benefits, and the increase in professional academic program enrollment, academic advisors and counselors continue to suggest that students not work, particularly during their first year on campus. This suggestion is based on the assumption that working decreases the amount of time for study. Astin (1984) has suggested that student time may be an institution's most precious resource. The extent to which students achieve goals may be a direct function of the time and effort he or she devotes to activities designed to produce these gains. For example, if the student's goal is to achieve good grades, then having the time available to attend study sessions would most likely help the student achieve his or her goal. If the student's goal is to develop leadership skills, than again, the student needs the time to participate in student organizations. Time is a limited and precious commodity. The more time a student devotes to employment, the less time he or she has for either academic or social activities.

More students are working their way through college. How this affects students' outcomes is not clear. This study proposes to investigate the effect of college student employment on four sets of outcomes; students' levels of social and academic integration, students' levels of professional commitment and commitment to school, students' academic achievement, and students' persistence in college. I was particularly interested in the differential affect of employment that is relevant to students' academic majors.

Outcome Variables

Social and academic integration refers to students' levels of integration or "fit" with the institutions's social and academic systems. This concept of social and academic integration is integral in theories and studies on student persistence and development (Tinto, 1975, 1987; Bean, 1980, 1982, 1985; Pascarella, 1985, Weidman, 1989). A solid body of evidence suggests that students with higher levels of social and academic integration are more likely to persist in college than students with lower levels of integration (Anderson, 1981, Munro, 1981, Pascarella & Chapman, 1983a, 1983b; Pascarella & Terenzini,

1983). Several researchers have suggested that the positive effect of on-campus work on persistence may be due to the opportunity for enhancing involvement and campus integration. Off-campus work, on the other hand, tends to inhibit integration. (Anderson, 1981; Ehrenberg & Sherman, 1987; Wenc, 1983). Hammes and Haller (1983) found that when working students were asked which activities decreased because of work commitments, more than half had reduced their leisure time and socializing time, and only 24% reported that employment took time away from studies. The effect of work on students' levels of social and academic integration has not been examined. Clearly, how employment interacts and influences students' opportunities for activities that increase levels of integration with the campus needs to be examined. Given the value of campus integration in predicting student development and persistence, and the fact that college student employment is an increasing phenomena, it is important to understand how employment affects levels of social and academic integration.

Educators, recognizing the growing interest of students in tangible career and employment benefits, are increasing their interest in career or professional commitment. For example, the American Association of Colleges of Pharmacy in their recent background papers on curricular revision (1992), call for specific students outcomes, such as professional identity. Career commitment has been defined as "one's attitude toward one's profession or vocation" (Blau, 1988, p. 289) and is one of the six characteristics of ideal professions (Kerr, Von Glinow, & Schriesheim, 1977). Colleges play an important role in the socialization of students for their aspired careers. Professional socialization can be interpreted as the changes that an individual undergoes during the course of training for a specific occupation. Students lay aside their laymen's views of the professional and begin to ascribe to the vision of the profession that the profession itself ascribes (Manasse, Kabat, Wertheimer, 1976). Part of the professional socialization process is the development of professional commitment. Reference groups such as faculty, peers, and employment colleagues may be viewed as important sources of socialization. However, the student's growing commitment to the profession enhanced through part-time academically related work, may create role conflict (Anderson, 1981). The student may become more committed to his job and his role as a employee, than to his role of student. Employment during college may have positive effects on career socialization, but could be detrimental to the students' commitment to the institution itself. The importance of institutional commitment in terms of its relationship to persistence has been well established by earlier research (Bean, 1980, 1985; Pascarella & Terenzini, 1983; Williamson & Creamer, 1988). How employment affects both professional commitment and institutional commitment needs to be examined.

Earlier research has found no difference in academic achievement between working students and nonworking students (Birdwell & Escovitz, 1990, Ehrenberg & Sherman, 1987; DeYoung & Sorofman, 1989). However, qualities of employment may differentially affect academic achievement. Academically relevant or related work may actually enhance student academic performance.

Student persistence in college has been the subject of a long and steady stream of research over the past several decades. As student characteristics change, and "working your way through college" becomes more commonplace, it is essential for policy makers and educators to understand the affect of employment on college student persistence.

Theoretical Model

The model guiding this inquiry is based on the student integration theory (Tinto, 1975, 1987) and the college persistence model (Bean, 1980, 1982, 1985) that explain why students leave college before graduation. Tinto suggests that student persistence is a longitudinal process that occurs as a result of interactions between the student and the institution. He explains students persistence as a result of the match or "fit" between student characteristics and the institution's academic and social characteristics. This match or fit, in turn, shapes students' commitment to the institution itself, and to the goal of college completion. Academic integration and social integration are two key concepts in Tinto's model. Academic integration stems from students' satisfaction with his or her intellectual or academic performance, and interactions with faculty and college staff. Social integration can be assessed by students' level of involvement with extracurricular activities and peer-group interactions. The stronger the integration, the greater the commitment to the institution and to the goal of college completion.

Tinto's work has been the basis for a large body of research, and the evidence largely supports the model's predictive validity and the importance of the two key concepts of social and academic integration (Bean, 1980, 1982, 1985;

Chapman & Pascarella, 1983; Munro, 1981; Nora, 1987; Pascarella & Chapman, 1983a, 1983b; Pascarella, Duby & Iverson, 1983; Pascarella, Smart & Ethington, 1986; Pascarella & Terenzini, 1979, 1980, 1983; Pascarella, Terenzini & Wolfle, 1986; Terenzini & Pascarella, 1977, 1978, 1980).

Alternatively, other models of student persistence and change have been developed. The college persistence model proposed by Bean (1980, 1982a, 1982b, 1985) and the socialization model proposed by Weidman (1989) differ from Tinto's (1975, 1987) model in that they include the continuous influence of non-college factors on students. These non-college factors include the continuous socializing role of parents, non-college friends, current and potential employers and community organizations. Colleges and universities are not isolated environments. Students continue to be influenced by outside sources. Cabrera, Castaneda, Nora and Hengstler (1992) noted that a major gap in Tinto's (1975, 1987) theory and the research associated with the Tinto theory is the exclusion of external factors. As suggested by Cabrera et. al. (1992) a more comprehensive picture of the persistence process can be achieved by combining the two major theories of college persistence.

Drawing from both of these models, the model developed and tested in this study includes both the interactions between the student and the institution, or the "fit", and the continuing influence of non-college forces such as employers and employment. The model also includes the affect of financial aid on academic achievement and persistence. Financial difficulties have been reported as the second most frequently cited reason given by students for withdrawing from college (Pantages & Creedon, 1978). Cabrera, Stampen and Hansen (1990) have combined Tinto's student integration theory with the ability to pay and found that ability to pay was a significant predictor of persistence. St. John (1989), building on the student integration theory, also included the variable student financial aid in his persistence study and found it be a significant predictor of persistence. Since the importance of finances in students' decisions to persist has been established, financial aid was included in the model as a predictor variable. Therefore, the model used in this inquiry posits that student background characteristics including financial aid, and employment characteristics affect students' levels of social and academic integration. These two sets of variables in turn affect students' levels of professional and institutional commitment. These three sets in turn affect students' academic achievement. All the variables then affect student persistence. The model is diagramed in figure 1.

Using a sample of pharmacy students, this study will estimate the effect of college student employment on students' levels of social and academic integration, professional and institutional commitment, academic achievement and persistence, using the model described. Given the rise in interest in professional or career track programs, of particular interest is the possible differential effect of work that is relevant to pharmacy.

Methods

A survey was designed and tested to address the research questions. The survey included questions on demographic and background characteristics of the students. These included the precollege characteristics suggested as potentially important correlates to professional commitment, academic achievement and persistence by a significant body of research: gender, ethnicity, age, English spoken at home, pre-pharmacy academic ability measured by grade point average, marital status, residence (on or off-campus) family socioeconomic status, parent's occupation, and percentage of college costs covered by financial aid. Information in this section was primarily requested in a "circle the correct response: format or "fill in the blank." The second section of the survey contained questions on students' work experience while in college. Respondents were asked their perception of their job's relevancy to their academic major. The third section of the survey included items designed to assess students' levels of academic and social integration (Pascarella & Terenzini, 1980). Specifically questions were included to measure the level of peer group interaction, interaction with faculty, student's satisfaction with their academic and intellectual development, and student's perception of faculty concern for student development and teaching. The fourth and final section included items designed to measure students' levels of professional commitment, and commitment to school (Blau, 1985, 1988; Pascarella & Terenzini, 1980; Rascati, 1990). Both the third and fourth section employed a five-point Likert scale to measure the student's level of agreement with the individual item statements.

The survey was administered to first year pharmacy students at three selected colleges of pharmacy. The institu-

tions were from both the private and public sector. Few if any of the studies testing either the Tinto or the Bean model of persistence examined students enrolled in professional programs. Given the direct link between the degree and a given profession, this population bears a closer examination. The study population also primarily consisted of commuting students. Given the recent call for a examination of college impacts on nontraditional students (Kuh, Baird, and Leslie, 1992) it is reasonable to test this model on this population of students. First-year pharmacy students were selected because the most variance in work experience occurs during the first year (DeYoung & Sorofman, 1989), and first year students experience the greatest attrition. They found that only 56 percent of first year pharmacy students worked as opposed to 68 percent and 72 percent for second and third year students respectively.

The total study population was 408 and included all first-year pharmacy students at the three institutions. Follow-up data on students' academic achievement (measured by actual semester grade point average) and persistence (measured by re-enrollment the following term at the next level) were obtained from the institutions the subsequent semester. Useable surveys and follow-up data were received from 199 students (response rate = 49%). The response rate was low due to the fact that many students chose not to allow the college to release their grades to the investigator.

Causal logic supplied the framework to build the regression equations. Variables were added to the equation in each step of the analysis to understand the effect of work in the presence of other variables. Logistic regression was used to examine the relationship between employment and persistence. Statistical significance for identifying important parameters in the model was established a priori at .05 due to the sample size. Missing data were replaced with the mean of the data present.

Results

Principle component factor analysis was utilized to determine the construct validity of the 24 items chosen to measure peer group interaction, faculty interaction, academic development, and faculty concern, and the 11 items chosen to measure professional commitment and commitment to school. Factors were rotated to the varimax criterion. Only eigenvalues greater than 1.00 were used to identify constructs for further analysis. The factor loadings of the individual items and the construct scale coefficient alphas are listed in table 1.

The sample can best be described as female (62%), Caucasian, (52%), and between the age of 21 and 22 (41%). The majority of students were single (86%) and lived off-campus (83%). Forty-three percent (43%) of the sample worked in jobs that were academically relevant to pharmacy, 34% worked in non-relevant jobs, and 23% did not work. Overwhelmingly, the students that reported working in a job related to pharmacy described their position as a "Pharmacy Technician". When asked to briefly describe what they do in their job as a pharmacy technician students mentioned, "filling prescription," "everything a pharmacist does, but I am checked," "assist head pharmacist," "fill prescriptions, use computer, clerical work, cashier". Students working in nonpharmacy related jobs described their position as: bank teller, waitress, office worker or salesman, to name a few. A complete description of the sample is in table 2. Means and standard deviations of the study variables and the correlation matrix are available in table 3.

The first analysis regressed the four measures of social and academic integration (peer group interaction, faculty interaction, academic development, faculty concern for student development and teaching) on student background characteristics and employment status. The results yielded significant but small affects on two of the four measures of social and academic integration (Peer group $F=2.37^*$, $R^2=.14$; Academic Development $F=3.63^*$, $R^2=.20$). Employment status was not significant in predicting peer group interaction nor was it a significant factor in predicting academic development. The results of the regression analysis are described in table 4.

The second equation regressed professional commitment on the student background characteristics, employment characteristics, and the four measures of academic and social integration. The independent variables explained 37% of the variance in professional commitment. Students with higher levels of satisfaction with their academic development and peer group interaction exhibited higher levels of commitment to the profession. Interestingly GPA had a negative effect on professional commitment. None of the other independent variables indicated significant affect on professional commitment. Neither relevant work nor nonrelevant were significantly related to students' levels of professional commitment indicating that

working did not affect or influence students' development of professional commitment. The results are presented in table 5.

The next equation added professional commitment to the series of independent variables. The variable commitment to school was regressed on all the independent variables. The set of independent variables explained 31% of the variance in commitment to school. Students' levels of professional commitment was the most important predictor variable and exerted a positive influence (Beta= .5091) This result is certainly not surprising, given that completion of academic credentials is a necessary prerequisite to entering the profession. Caucasian students also exhibited higher levels of commitment to school than other ethnic groups. Neither relevant work nor nonrelevant work were significantly related to commitment to school indicating that employment status had no effect on students' commitment to school. The results are presented in table 5.

The next equation regressed academic achievement (measured by semester grade point average) on the individual background characteristics, employment status, academic and social integration scales, professional commitment, and commitment to school. The set of variables explained 40 percent of the variance in academic achievement. The results are presented in table 6. Not surprising, past academic performance (GPA) was a significant and powerful predictor of current academic performance (Beta=.5127). The variable measuring students' levels of commitment to school was also a significant positive predictor of spring grade point average. Students that exhibited higher levels of commitment to school were more likely to achieve higher grade point averages. Professional commitment, however, indicated a significant negative influence on actual spring grade point average.

The final analysis examined the effect of the full model including all the independent variables on persistence. Logistic regression analysis was conducted in a stepwise, model building approach. Table 7 describes the changes in G^2 and the improvement of fit p-value for each step of the analysis. Model five, with the inclusion of actual spring grade point average, indicated a significant improvement of fit relative to the previous models (Change in G^2=35.54, p=.001). This suggests that by adding the variable to the equation, the model best fit the sample data.

The individual parameters of the model are interpreted in terms of logits rather than the original scale of measurement. For example, the beta weight for marital status listed in table 7 tells us that married students are 8.6936 logit units more likely to persist than single students. As in least squares regression, categorical independent variables are interpreted as a function of the excluded category. As the use of logit units is problematic for interpretation and practice, Cabrera (1994) suggests the use of the delta-p statistic to illustrate the changes in probabilities in the dependent variable resulting from changes in the independent variables. The formula recommended by Peterson (1985) for the delta-p will be used. Following recommendations by St. John (1989, 1991) and Cabrera, delta-p statistics will be calculated only for the independent variables found to be significant in the logistic regression model, as there is no test for the statistical significance of delta-ps.

The model described in table 7 indicates that age, marital status, level of peer group interaction, and actual spring grade point average are significant variables in explaining the probability of persisters and nonpersisters. Cabrera (1994) states " As in the case of beta weights for categorical variables, Delta-ps are to be interpreted in terms of the excluded category." He goes on the state "In the case of continuous variables, Delta-p represents the incremental effect on the outcome variable resulting form a unit change in the dependent variable." The results of the delta-p calculations indicate that for every year younger a student is than the sample mean, the probability for persistence increase by 6.7 percent. Marriage increases students' probability for persistence by 7.0 percent. A unit increase in students actual spring grade point average results in a 7 percent increase in the probability of persistence. A unit increase in a students level of peer group interaction results in a decrease of 6 percent in the probability of persistence.

Conclusion

A case has been presented that calls for a re-examination of the effect of work on college student outcomes. As suggested by Astin (1984) students' time may be an institution's most precious commodity. If a student is committed to working, that decreases available time for other activities such as study sessions, informal faculty meetings, supplemental lectures, and extracurricular activities. These activities increase students' levels of social and academic integration which in turn positively influence achievement and persistence. However, academically relevant work may provide opportunities for integration and learning. The results indicated that the set of independent variables: individual characteristics, financial aid,

and employment status explained a small, but significant amount of the variance in two of the four measures of social and academic integration (peer group interaction and academic development). However, the results indicated that employment had no relationships to students' levels of social and academic integration. The student employed as a bank teller, the student pharmacy technician, and the nonworking student all fared equally well, net of the effect of the other variables included in the model. The working student has learned how to combine employment with other activities that lead to social and academic integration. For example, in spite of time constraints, this student population still found time for a satisfactory level of peer group interaction. As one student said in a previous study, "I just did not socialize or talk to people as much since my job provided for another kind of socializing. This involved meeting and dealing with people on the job." (Hammes & Haller, 1983, p. 533).

The results of the analysis examining the effect of the independent variables on professional commitment and commitment to school are more convincing. Two of the four campus integration scales; faculty interaction, and academic development, had strong positive influences on students' levels of professional commitment. It has been suggested that faculty interaction may have a unique positive influence on aspects of student social and interpersonal development (Pascarella, Smart, Ethington & Nettles, 1987). The results of this analysis substantiate that statement. However, again, employment had no effect on students' levels of professional commitment. Whatever occurs in students' places of employment, it has no effect on students' levels of professional commitment. In spite of being surrounded by pharmacy, for those students employed as a "Pharmacy Technician", it is the in-college socializing forces of faculty interaction that are the important influences on the development of students' professional commitment. This may be a situation unique to pharmacy and needs to be examined in other professions. However, it is clear that the benefits of student/faculty interaction are substantial.

The variable professional commitment when added to the set of independent variables had a not surprising strong and positive influence on students' levels of commitment to school, given that the degree is the passport to licensure. Student employment status was not related to levels of commitment to school.

Working students fared equally as well as nonworking students in terms of academic achievement. Employment while in college simply did not appear to affect students' levels of academic achievement. In spite of having less available time for study, working students may have simply become more efficient. For example, Hammes and Haller (1983) interviewed a number of working students and one said, "Work makes me more confident, encourages me to learn to allocate my time more effectively, to concentrate harder on what I am studying." (p.532). In addition, the students in this sample have already experienced a minimum of two years of college work. Perhaps the students who cannot perform competitively academical while working, have make the choice not to work.

Student employment did not have any effect on persistence. This may be because of the nature of the sample. These students may have learned how to maintain their grade point average while working, or conversely learned that they cannot work and do not while in college.

This study attempted to examine differential effects of pharmacy related work on students' levels of social and academic integration, academic achievement, and persistence using a model developed and drawn from work by Tinto (1975, 1987) and Bean (1980, 1982, 1985). The lack of effect of pharmacy related employment on these outcomes may be in part, a result of the nature of the pharmacy student sample. The value of working in an academically relevant job may manifest itself in other outcomes, such as higher levels of career satisfaction, and increased levels of socialization to the profession. Clearly this model needs to be tested on other populations of professional students.

The results of this study suggest that today's pharmacy students clearly can handle the multiple demands of school and work without negatively affecting academic achievement or persistence.

Implications for Practice

Two major implications for practice are clear form these results. One is recognizing the importance of campus integration. The two constructs of social and academic integration originally postulated by Tinto (1975, 1987) have demonstrated their utility in influencing student outcomes. Students with higher levels of faculty interaction, and higher levels of satisfaction with their academic development demonstrated higher levels of professional commitment. Professional commitment in

tum positively and significantly affected commitment to school. Programmatic efforts should be directed toward providing ample opportunity and encouragement for faculty interaction. For example, faculty can be involved in freshmen orientation, serve as faculty advisors, initiate small, faculty led discussion or problem solving groups.

The second major practice implication affects attitudes toward student employment. The common perception that students should not work, particularly during their first year of college, simply does not have the empirical evidence to support it. While working does not positively affect any of the outcomes variables under study, working certainly did not detract from student performance. It appears that today's students have learned to work with the competing demands on their time and are successful college students.

In spite of the lack of empirical evidence supporting the positive influence of academically related work on student outcomes, students perceive to receive benefits from working in a job related to their major. For example, one student has said "By picking my jobs carefully, I can incorporate my school work into my other work." "Each job serves a purpose." (USA Today, November 18, 1993). Pharmacy students too believe in the value of real-life work experience. Many students have voiced to me the feeling that they have to work in pharmacy in order to do well in pharmacy school. The indirect effects of this perceived benefit on student outcomes needs to be examined.

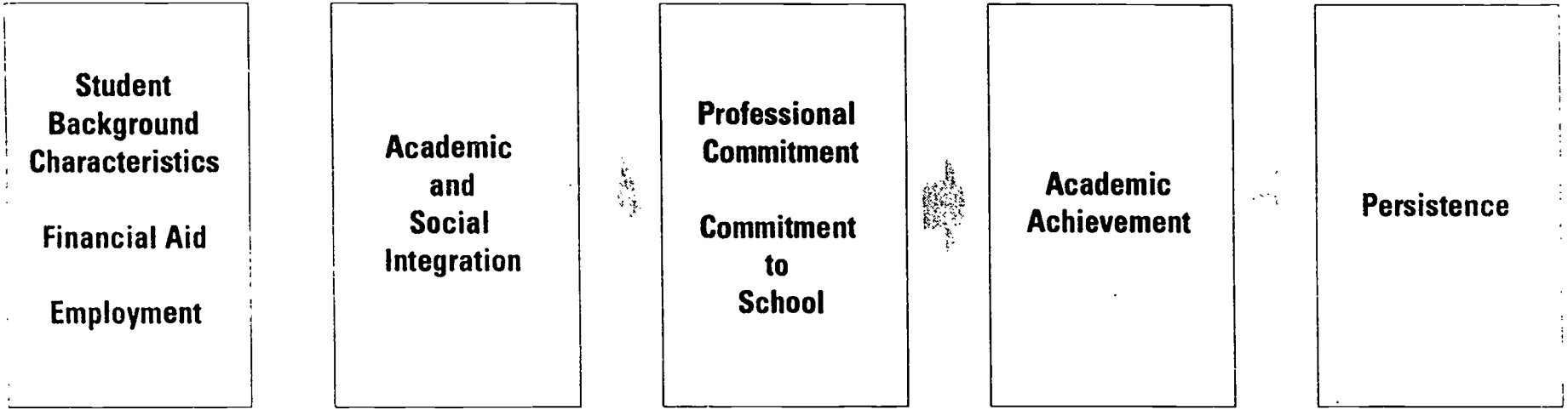

Figure 1. Conceptual Model of the Effect of Work

TABLE 1.
ITEM FACTOR LOADINGS AND ALPHA RELIABILITIES

Scale and Item	Loading	Scale Alpha
Scale 1 Peer Group Interaction		
Since coming to this university, I have developed close personal relationships with other students.	.860	.824
The student friendships I have developed at this university have been personally satisfying.	.857	
My interpersonal relationships with other students have had a positive influence on my personal growth, attitudes, and values.	.754	
my interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas.	.673	
It has been difficult for me to meet and make friends with other students.	.638	
Scale 2 Faculty Interaction		
My non classroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes.	.829	.874
My non classroom interactions with faculty have had a positive influence on my intellectual growth and interest in ideas.	.861	
My non classroom interactions with faculty have had a positive influence on my career goals and aspirations.	.795	
Since coming to this university, I have developed a close, personal relationship with at least one faculty member.	.755	
I am satisfied with the opportunities to meet and interact informally with faculty members.	.693	
Most of the faculty I have had contact with are interested in helping students grow in more than just academic areas.	.595	
Most faculty members I have had contact with are genuinely interested in teaching.	.440	
Scale 3 Faculty Concern for Student Development and Teaching		
Few of the faculty members I have had contact with are generally interested in students.	.794	.705
Few of the faculty members I have had contact with are generally outstanding or superior teachers.	.788	
Few of the faculty members I have had contact with are willing to spend time out of class to discuss issues of interest and importance to students.	.740	
Few of my courses this year have been intellectually stimulating.	.479	
Scale 4 Academic and Intellectual Development		
I am satisfied with the extent of my intellectual development since enrolling in this university.	.807	.799
My academic experience has had a positive influence on my intellectual growth and interest in ideas.	.837	
I am satisfied with my academic experience at this university.	.779	
My interest in ideas and intellectual matters has increased since coming to this university.	.575	
I have performed academically as well as I anticipated I would.	.491	
Scale 5 Professional Commitment		
I am more committed now to a career in pharmacy than I was a year ago.	.521	.872
Compared to a year ago, I am more convinced now that my career in pharmacy will be personally satisfying.	.770	
If I had to choose my major again, I would still choose pharmacy.	.621	
If I had all the money I needed without working, I would continue my pharmacy studies.	.670	
I like the profession of pharmacy too much to give up my pharmacy studies	.726	
I believe pharmacy will be the ideal profession for a life's work.	.788	
Compared to a year ago, I am more convinced now that my career in pharmacy will be financially satisfying.	.695	
Compared to a year ago, I am more convinced now that my career in pharmacy will be intellectually stimulating.	.791	
Scale 6 Commitment to School		
It is important for me to graduate from pharmacy school.	843	.610
I am disappointed I began my pharmacy studies.	.641	
I am likely to return to pharmacy school in the fall.	.821	

TABLE 2

DESCRIPTION OF THE SAMPLE

		N=199	%
Gender			
	Male	76	(38.1)
	Female	123	(61.8)
Ethnicity			
	White	105	(52.8)
	Black/Hispanic/other	20	(10.1)
	Asian	74	(37.1)
English spoken at home			
	No	76	(38.2)
	Yes	123	(61.8)
Age			
	19-20	27	(13.6)
	21-22	82	(41.2)
	23-24	40	(20.1)
	25-26	14	(7.0)
	27-30	16	(8.0)
	31-35	8	(4.0)
	36-50	12	(6.1)
Percentage of College Costs Covered by Financial Aid			
	0%	23	(11.6)
	25% or less	24	(12.1)
	26% to 50%	25	(12.6)
	51% to 75%	30	(15.1)
	76% to 99%	33	(16.6)
	100%	64	(32.2)
Marital Status			
	Single	171	(85.9)
	Married	28	(14.1)
Residence			
	Off campus	166	(83.4)
	On campus	33	(16.6)
Parents' Occupation			
	Nonhealth	162	(81.4)
	Health	37	(18.6)
Work			
	Not working	68	(22.6)
	Nonrelevant work	45	(34.2)
	Relevant work	86	(43.2)
Persistance			
	Yes	185	(93.0)
	No	14	(7.0)

TABLE 3
DESCRIPTIVE STATISTICS AND CORRELATION MATRIX OF SAMPLE VARIABLES

	Mean	Std.Dev	Correlation																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1 Female	.618	.487	1.00																			
2 Caucasian	528	.500	- 102	1.00																		
3 Black/Hispanic/ other	101	.301	- 116	-.353	1.00																	
4 English spoken at home	618	487	- 192	.561	022	1.00																
5 Age	23 91	4.830	-.222	.012	.158	.080	1.00															
6 GPA	012	829	067	- 038	011	.001	071	1.00														
7 Financial aid	4 095	1.763	.131	-.075	- 047	- 063	-.261	-.058	1.00													
8 Married	141	349	- 098	.007	009	- 039	514	134	-.227	1.00												
9 Living on campus	814	390	023	.065	.031	.023	.037	-.088	.041	.045	1.00											
10 SES	- 029	790	053	062	-.136	246	- 135	.049	-.018	-.109	.056	1.00										
11 Parents occupation in health sciences	166	373	- 067	- 174	- 014	- 011	022	-.005	-.009	-.014	.065	.407	1.00									
12 Nonrelevant work	226	419	- 193	018	099	079	-.013	-.038	-.036	-.081	-.042	.022	.050	1.00								
13 Relevant work	432	497	185	155	- 022	080	- 027	- 097	-.047	.055	-.156	.059	.020	-.472	1.00							
14 Peer group	3 881	694	039	.271	- 160	.212	- 111	- 001	-.004	-.085	.164	.143	-.022	-.043	.100	1.00						
15 Faculty interaction	3 084	694	.031	- 105	.142	-.135	006	.100	.064	-.031	.115	-.028	-.096	-.061	-.110	.018	1.00					
16 Academic development	3 413	708	044	- 191	060	- 258	055	154	.049	017	.167	-.019	-.177	-.156	-.028	.179	.462	1.00				
17 Faculty concern	2 785	742	- 012	208	- 095	160	- 009	-.059	-.006	- 005	.030	-.080	-.117	-.022	.133	.064	.085	081	1 00			
18 Commitment to profession	4 023	685	085	- 152	050	- 202	- 050	- 026	-.006	- 024	.149	-.084	-.045	-.117	-.059	.149	.381	.540	050	1 00		
19 Commitment to service	4 581	482	040	097	- 010	011	007	032	065	032	085	.009	-.099	- 087	028	121	190	327	- 002	499	1 0	
20 Cumulative GPA	2 76	680	052	- 025	121	018	045	547	- 036	034	116	084	- 067	- 097	- 090	031	- 010	153	043	- 38	05	

TABLE 4
SUMMARY OF REGRESSION ANALYSES TO PREDICT SOCIAL AND ACADEMIC INTEGRATION

Independent Variables	Peer Group		Faculty Interaction		Academic Development		Faculty Concern	
	b	Beta	b	Beta	b	Beta	b	Beta
Female	.0540	.0379	.0125	.0088	-.0740	-.0509	-.0038	-.0025
Caucasian	.2703*	.1948*	.0956	.0691	-.0871	-.0616	.1260	.0850
Black/Hispanic/Other	-.1417	-.0615	.4373	.1901	.1389	.0592	-.2021	-.0821
English spoken at home	.1350	.0947	-.2530	-.1777	-.3964*	-.2729*	.1936	.1271
Age	-.0099	-.0692	.0051	.0356	.0177	.1209	-.0015	-.0096
GPA	.0014	.0017	.0649	.0776	.1105*	.1294*	-.0335	-.0375
Financial aid	-.0014	-.0036	.0251	.0639	.0271	.0676	.0040	.0095
Married	-.0633	-.0318	.0801	.0402	.0885	.0436	.0011	.0131
On campus living	.3258*	.1830*	.1675	.0942	.2751*	.1516*	.1440	.0757
SES	.0623	.0709	.0757	.0862	.1559*	.1740*	-.1071	-.1140
Parents'occupation in health sciences	-.0112	-.0060	-.2149	-.1156	-.5102*	-.2689*	-.1316	-.0661
Nonrelated work	.1144	.0818	-.1849	-.1324	-.0123	-.0086	.2268	.1518
Relevant work	.0137	.0083	-.1899	-.1147	.2268	-.1344	.1007	.0569
		R^2=.14 Df=13,185 F=2.37*		R^2=.10 Df=13,185 F=1.55		R^2=.20 Df=13,185 F=3.36*		R^2=.09 Df=13,185 F=1.34

*$p \leq .05$

TABLE 5
SUMMARY OF REGRESSION ANALYSES TO PREDICT PROFESSIONAL COMMITMENT AND COMMITMENT TO SCHOOL.

Independent Variables	Professional Commitment		Commitment to School	
	b	Beta	b	Beta
Female	.1043	.0742	.0025	.0025
Caucasian	-.0314	-.0229	.1885*	.1957*
Black/Hispanic/Other	.0313	.0137	.0428	.0268
English spoken at home	.0023	.0616	.0287	.0290
Age	-.0141	-.0998	.0026	.0265
GPA	-.1065*	-.1288*	.0192	.0331
Financial aid	-.0334	-.0858	.0297	.1086
Married	.041	.0206	.0735	.0531
On campus living	.0484	.0275	.0425	.0344
SES	-.1130	-.1303	.0411	.0673
Parents'occupation in health sciences	.2097	.1141	-.0889	-.0688
Nonrelated work	-.1239	-.0898	.0266	.0231
Relevant work	-.1135	-.0694	.0578	.0596
Peer Group	.0767	.0777	.0241	-.0348
Faculty Interaction	.1630**	.1650**	-.0212	-.0306
Academic Development	.4554**	.4704**	.0669	.0982
Faculty Concern	.0028	.0030	.0529	-.0816
Professional Commitment			.3581**	.5091**
	R^2=.37		R^2=.31	
	Df=17,181		Df=18,180	
	F=6.27*		F=4.61*	

*p≤.05 ** p≤ .01

TABLE 6
SUMMARY OF REGRESSION TO PREDICT ACTUAL SPRING GPA

Independent Variables	Actual Spring GPA	
	b	Beta
Female	-.0015	-.0011
Caucasian	-.1531	-.1126
Black/Hispanic/Other	-.2760	-.1223
English spoken at home	-.0241	-.0172
Age	.0074	.0523
GPA	.4207**	.5127**
Financial aid	-.0168	-.0435
Married	-.1465	-.0750
On campus living	.0688	.0394
SES	.0684	.0795
Parents' occupation in health sciences	-.1618	-.0887
Nonrelated work	-.1955	-.1206
Related work	-.1583	-.1156
Peer Group	.0211	.0216
Faculty Interaction	-.0949	-.0968
Academic Development	.1055	.1097
Faculty Concern	.0957	.1044
Commit. to Profession	-.2221**	-.2237**
Commit. to School	.2469**	.1749**
		R^2 = .40
		Df = 19,179
		F = 6.24**

* $p \leq .05$ ** $p \leq .01$

TABLE 7
EFFECTS OF INDEPENDENT VARIABLES ON PERSISTENCE:
RESULTS OF LOGISTIC REGRESSION

Variable	Betas 1	2	3	4	5
Female	.4787	.1612	.3619	.3916	3.8709
Caucasian	-.4554	-.5885	-.1576	-.3157	2.2866
Black/Hispanic/ other	-.8911	-.7651	-.0791	-.3402	4.5142
English spoken at home	-.9406	-.7762	-.4593	-.3979	.0821
Age	-.0983	-.1010	-.1655*	-.1642*	-.7402**
GPA	.6281	.6312	.8083	.8371	-.2259
Financial Aid	.1168	.0887	.0134	.0136	.5068
Married	1.8477	1.3838	1.9991	1.9470	8.6936*
Living on Campus	1.0699	.8514	.9609	.9186	.4902
SES	.3460	.2933	.3697	.3427	.4220
Parents' occupation in health sciences	-.9435	-.8363	-.8286	-.8522	-1.9144
Relevant		-.1039	-.4803	-.3925	-2.0597
Nonrelevant		-1.2300	-1.7258	-1.6694	-3.8002
Peer group			-1.3432*	-1.3958*	-4.4688*
Faculty interaction			-.4444	-.5386	-.9329
Academic development			.5443	.4640	-.1566
Faculty concern			.6142	.5840	-.9100
Commit to pharmacy				.2341	3.1732
Commit to school				.2543	-1.2544
Spring GPA					8.4281**
	G^2=79.386 Df=18 G^2/Df=.42 PCP=93.97 Model X^2=16.68 Df=11	G^2=76.66 Df=185 G^2/Df=.42 PCP=92.96 Model X^2=19.41 Df=13	G^2=68.34 Df=181 G^2/Df=.38 PCP=93.97 Model X^2=27.73* Df=17	G^2=67.92 Df=179 G^2/Df=.38 PCP=93.97 Model X^2=28.15 Df=19	G^2=32.38 Df=178 G^2/Df=.18 PCP=95.98 Model X^2=63.68* Df=20

* p≤ .05 ** p≤ .01